



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,940	02/09/2004	James L. Hanna	10588-032	8622
7590	05/23/2006		EXAMINER	
Robert K. Fergan BRINKS HOFER GILSON & LIONE P.O. Box 10395 Chicago, IL 60610			PHAM, HOA Q	
			ART UNIT	PAPER NUMBER
			2877	

DATE MAILED: 05/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

8

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/774,940	HANNA, JAMES L.
	<b>Examiner</b>	<b>Art Unit</b>
	Hoa Q. Pham	2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-6,9,12-19,21,22 and 25-30 is/are rejected.
- 7) Claim(s) 7,8,10,11,20,23 and 24 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 09 February 2004 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                                                         |                                                                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                                    | Paper No(s)/Mail Date: _____.                                               |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>2/9/04&amp;7/29/05</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|                                                                                                                                                         | 6) <input type="checkbox"/> Other: _____.                                   |

## DETAILED ACTION

### *Drawings*

1. The drawings filed on 2/9/04 have been accepted.

### *Claim Objections*

2. Claim 22 is objected to because of the following informalities: the term "disuse" in line 9 is not understood. Should it be changed to -diffused--?. Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-6, 9, 12-19, 21-22, 25-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanna (6,252,661) in view of Haas et al (5,517,861).

Regarding claims 1, 22 and 27; Hanna (of record) discloses an optical sub-pixel parts inspection system which has all the features of the present invention except that the system is used for detecting cracks of the workpieces; however, such a feature is known in the art as taught by Haas et al. Haas et al, from the same field of endeavor, discloses a system for monitoring the growth of the surface cracks in a workpiece on the basis of the image received by the image capturing means (3) (see figures 1-2). It would

have been obvious to one having ordinary skill in the art at the time the invention was made to use the basic system of Hanna to determine the cracks of a workpiece as taught by Haas et al if additional inspection was desired.

Regarding claim 2, see column 6, line 19 of Hanna for the use of diffuse light source; thus, the image received by the imaging means including diffuse reflection.

Regarding claim 3, see figure 2 of Hanna for the sheet of light intersects the part across the part's width.

Regarding claims 4-5, Hanna teaches the use of a laser diode (column 4, line 15).

Regarding claim 6, see figure 6 of Hanna for the beam shaper (56).

Regarding claim 9, see figure 2 shows that the light sources (40A-40D) and photosensitive array (42A-42D) are mounted on a reference plate (not shown).

Regarding claim 12, see track (16) in figure 1 of Hanna.

Regarding claims 13-14 and 25, figure 2 of Hanna shows that the bolt (22) is positioned on a V-track.

Regarding claims 15-16, see column 5, lines 14-33 of Hanna for the use of digital image.

Regarding claims 17-18, 26 and 28, see figure 3A-3C of Haas et al.

Regarding claims 19, 21 and 29, using a position sensor in an inspection system is well known in the art; thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include in Hanna a position sensor for sensing the position of the workpiece, thus a accuracy of the inspection is obtained.

Regarding claim 30, see track (16) in figure 1 of Hanna.

***Allowable Subject Matter***

5. Claims 7-8, 10-11, 20, and 23-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
  
6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Following references are relative to an inspection system: Adachi (6,111,601), Bennett et al (2003/0201211), Hanna et al (6,285,034), Kutcheneriter et al (4,978,223) and Mufti (WO 97/21072).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoa Q. Pham whose telephone number is (571) 272-2426. The examiner can normally be reached on 7:30AM to 6 PM, Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on (571) 272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Hoa Q. Pham  
Primary Examiner  
Art Unit 2877

HP  
May 18, 2006